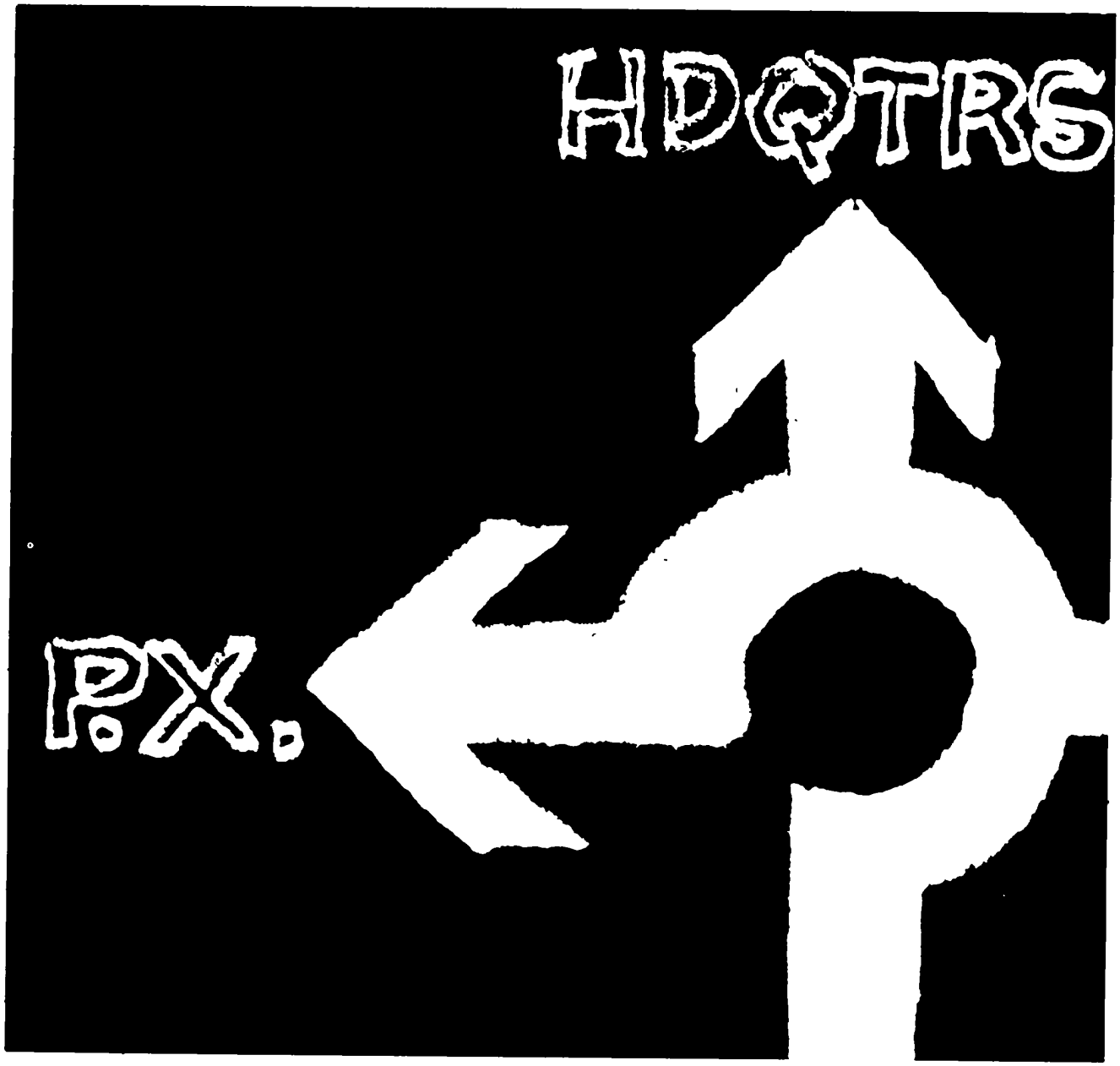
A sign's fundamental purpose is to communicate information. However, putting the message across emphatically is not enough; it must be attractive and harmonious with its surroundings. Consideration must be given not only to what a sign says but also how it says it, its visual appearance and organization, its location, its structural support system and its relation to other signs within an installation. Establishing and implementing a coordinated signing system is a relatively simple, inexpensive but effective means of improving the visual appearance and functioning of an installation.



Section I:

Observations and Objectives.

10-1.
Typical Problems.

A. Coordination.

Outdoor signing and graphics on military installations are too often confusing, unattractive or obsolete. The motorist is not always provided with sufficient information at critical decision points, and is sometimes confused by a clutter of sign messages. A coordinated signing system seldom exists, and basic rules of visual communication are often overlooked. This often detracts from the overall image of an installation, frustrating the visitor and sometimes creating unsafe conditions

fig. 10-1.

fig 10-2

fig. 10-3.

B. safety.

Excessive information is often provided at decision points, allowing insufficient time for a driver to interpret and react. This results in traffic congestion and safety hazards *(fig. 10-1).*

C. Clutter.

Confusion and clutter result when signs of varying size, shape and function are added to existing signs with no consideration for their relationship to each other. Without the discipline of an overall system, signs become both unattractive and ineffective *(fig. 10-2).*

D. Other Factors.

Other typical problems include redundancy of sign messages, inconsistency of signs of similar function, and inflexible sign systems that make changes of messages difficult and costly *(fig. 10-3).*

10-2.
Objectives.

A. Communicate Necessary Information Effectively.

The information conveyed must be correct, clear, useful and visually comprehensible. The sequence and hierarchy of information that is communicated must correspond to user needs.

B. Contribute Positively to the Overall Visual Image of an Installation.

Signing should be consciously designed as an attractive, consistent, simple and uncluttered information system. The signing system should be coordinated with the design of other site furnishings to minimize the number of streetscape elements and reduce clutter.

C. Establish an Overall Signing System that is Coordinated, Consistent, Flexible and Economical.

A signing system should provide consistency and continuity to the overall visual image of an installation. The system should be adaptable to incremental changes and additions over time; a modular system can facilitate this requirement while maintaining the desired visual consistency. Initial and life-cycle cost implications of materials, mounting and fabrication alternatives must be considered in the design of the signing system.

Section II:

Design Guidelines.

10-3.
Planning and Implementing a Signing System.

A. Process.

Employ the following general design process to establish a coordinated overall signing system.

1. Data Collection and Analysis. Initially observe and analyze exterior pedestrian and vehicular traffic flow to identify significant decision making locations.

2. Site Plan and Schedule.

Locate all proposed signs on a site plan of the installation in accordance with distance and placement guidelines. Illustrate on the site plan the sequence of information to be conveyed. Precisely define, locate and key to a schedule all identification al, directional and regulatory sign $ *(fig. 10-4).*

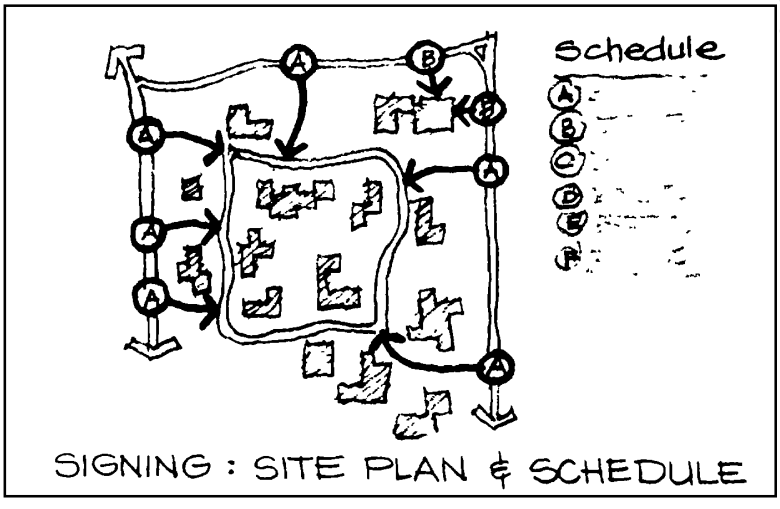


fig. 10-4.

3. Component Design and Specifications. Design and develop procurement drawings and specifications of all elements that comprise the signing system including text, typography, color, illumination, support system and other standardized components. Full-size, mock-up samples in the color and type style combinations should be tested in position on the site before finalizing procurement drawings and specifications and embarking on a major signing program *(fig. 10-5).*

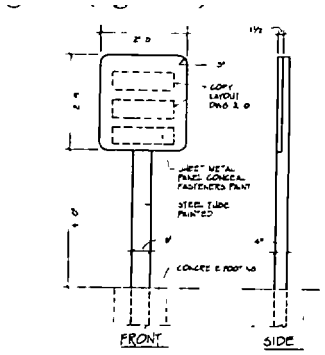


fig. 10-5.

4. Signing Manual.

Prepare a signing manual as a guide for continuing use of the system. The manual should include a site plan and schedule, component specifications, mandatory operating procedures and standards for administrative and shop personnel to ensure

fig. 10-6.

consistent application of the system *(fig. 10-6).*

B. Purposes.

Orient the signing system study to fulfill the following purposes.

1. Provide signs only where a need exists.

2. Eliminate unnecessary or conflicting signs.

3. Ensure that the placement of signs relates to their function.

4. Provide signs that are visible and designed to attract viewers' attention.

5. Provide signs that are harmonious with their architectural and natural setting and contribute to the installations' overall image and identity.

6. Ensure that signs of similar function are consistent.

7. Ensure that all signs are legible.

8. Ensure that the wording of all signs is understandable and concise and that the message conveyed is correct, clear and understandable.

9. Provide a hierarchy of information that conveys information in the sequence most beneficial to the viewer.

10. Facilitate changes or incremental additions and deletions to the signing system as the need arises.

11. Provide an economical system in terms of implementation and maintenance.

12. Meet any special requirements for the handicapped.

10-4.

Elements of a Signing System.

A. Types of Signs.

Signs should be organized into three general categories, each treated distinctly within the signing system.

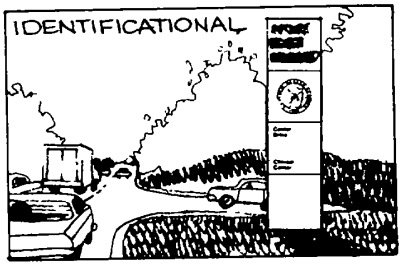


fig. 10-7.

1. Identification Signs.

These are naming signs which identify the installation, areas within the installation, major tenants, buildings and organizational or functional components. They tell the viewer where he is and since they always appear at entrances they greet the motorist or pedestrian and visually set the mood for other graphics on the site. They must be compatible in scale and character with the architecture surrounding them, or on which they are placed *(fig. 10-7).*

2. Directional Signs.

These signs serve to guide the motorist or pedestrian in, around, and out of the installation. Signs intended for pedestrian guidance should be of a smaller scale and located so as not to conflict with signs intended for motorists. The legibility and positioning of directional signs as well as the ordering of information on them is critical to their effectiveness. Each installation requires careful analysis of pedestrian and vehicular traffic patterns to determine decision points and appropriate information and directions to be provided *(fig. 10-8).*

3. Regulatory Signs.

These signs set the rules for travel and parking on the installation. Included in this category are speed limit signs, signs controlling turning and lane usage, warning signs, signs controlling parking, etc. Related to these signs are pavement markings and traffic signals. All signs of this type should conform to the standards contained in the latest edition of the *Manual on Uniform Traffic Control Devices (MUTCD*) by the Federal Highway Administration. The *MUTCD* provides federal standards for design, shapes, colors, dimensions, symbols, word mes-

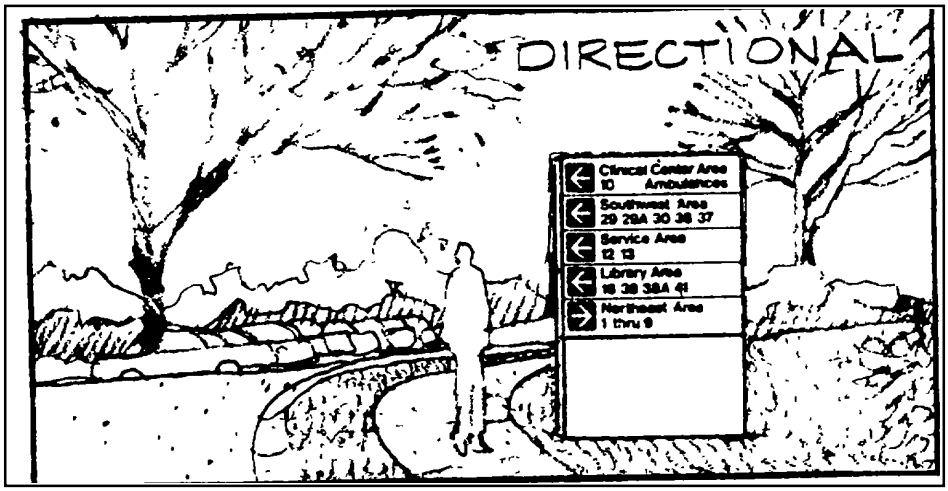


fig. 10-8.

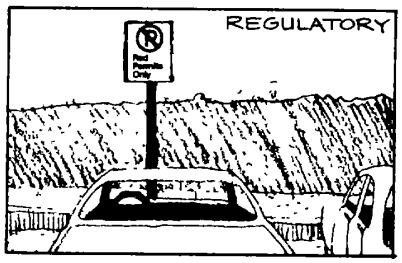


fig. 10-9.

sages, lettering, illumination, reflecting surfaces, locations and erection of all regulatory signs, signals and pavement markings *(fig. 10-9).*

B. Sign System Characteristics.

An installation's sign system should posses the following attributes:

1. Consistency. The sign system should be governed by standards, appropriate to the installation's needs, that are applied consistently throughout the installation. These standards include sign size, location, shape, typeface, symbols, colors, materials and mounting details.

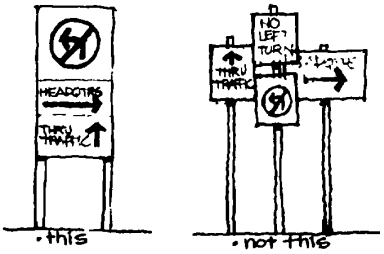


fig. 10-10.

2. Simplicity. Sign systems should be efficient and not overload the intended user with unnecessary information. An efficient system eliminates redundant signing and over-signing to reduce clutter, confusion, or hazardous conditions, especially at intersections. Sign messages should be simple because the amount of information a pedestrian or driver can receive, process and remember is limited. The act of reading a sign should never distract his attention unduly from the act of driving. In general, the amount of information that is to be conveyed by a sign should be limited to ten items (an item of information being defined as a syllable, symbol, abbreviation or shape) *(fig. 10-10).* At a decision point, the driver should be presented with no more than two choices. Advance warning signs should be provided where necessary to reinforce information and allow additional time for the driver to process the information and act.

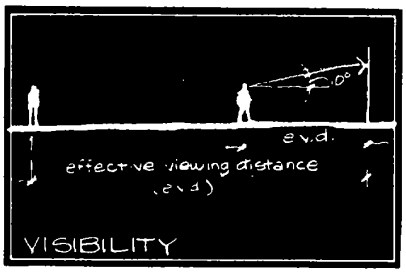


fig. 10-11.

3. Visibility. Signs should be located at significant decision points and positioned to provide a clear line-of-sight from the point of desired reading, free of obstructions and within a ten (10) degree angle of the decision maker's normal line of vision. The design of the sign should be capable of attracting the intended user's attention *(fig. 10-11).*

4. Legibility. A sign's type style, size of letters, letter/word/ line spacing, copy positioning and color should be carefully selected for legibility, which is most crucial on all signs.

5. Hierarchy and Sequence. Signs, in terms of their wording and size of message, should provide a hierarchy of information whose sequence is most beneficial to the intended audience.

6. Coordination. The design of a sign system may be coordinated and integrated with the design of lighting and site furnishings to minimize the number of individual streetscape elements and reduce clutter. Many manufactured systems exist that combine such elements as street lighting,

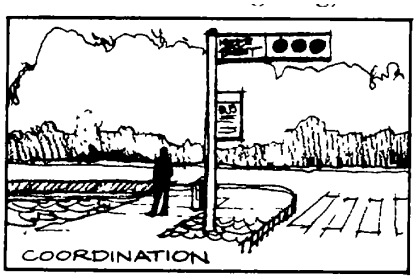


fig. 10-12.

traffic signals, graphics, telephones, litter containers and other site furnishings into an integrated system. This coordination not only improves the visual appearance of installations but also provides a unified location that promotes ease of pathfinding for both motorist and pedestrian *(fig. 10-12).*

7. Compatibility. Entrance signs, building identification signs and all free-standing signs should be well designed and constructed of quality materials in keeping with the architectural and natural site character of the installation.

8. Flexibility and Economy. A signing system should be able to be expanded, contracted or modified as required over time in response to mission changes, new buildings, demolition of buildings or relocation of building occupants. Modular signing systems with interchangeable components can greatly facilitate these changes. Signing hardware and basic message units should be designed to allow change of individual messages without affecting the remainder

of accompanying messages *(fig. 10-13).*

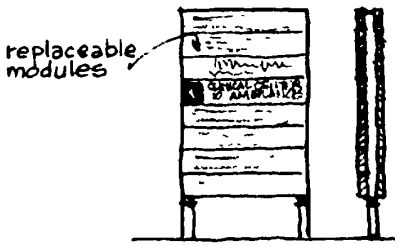


fig. 10-13.

10-5.
Guidelines for Effective Communication.

A. Lettering.

Type style, letter size, letter/ word/line spacing, and copy positioning should be carefully selected for legibility of the sign message.

1. Type Style. A sans-serif type style such as Helvetica Medium has been found to be one of the most easily read and handsome type styles for sign use. Other sans-serif or serif type faces that meet the following requirements are also acceptable. As a rule, a type style whose ratio of stroke width to capital letter height is 1: 5 for black letters on a white background, and 1: 6 or 1: 7 for white on black is recommended *(fig. 10-14).* Upper case letters should be approximately 1/3 larger than the "x" height of lower case letters. Condensed or extended letter styles should be avoided. Upper and lower case lettering tends to enable quicker word recognition than all capital letters because of the varied word shapes they produce. The use of upper case lettering should be limited to a few essential situations such as directional information as found on a route number and direction sign (1-95 EAST) or the direction of an exit or turn (NEXT RIGHT).

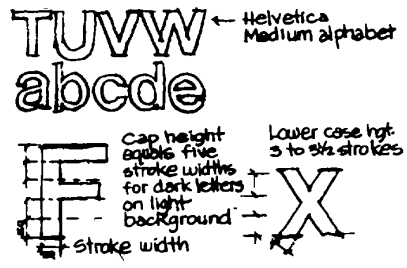


fig. 10-14.

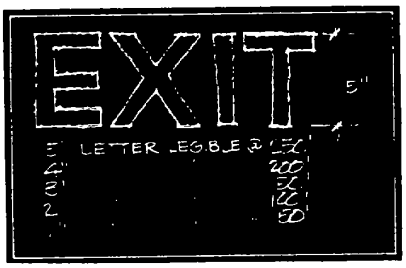


fig. 10-15.

2. Type Size. The standard guide in determining appropriate letter size of a highly legible type style is to provide 1" (one inch) of the letter height of an upper case "X" for each 50' (fifty feet) of viewing distance *(fig. 10-15).* Therefore, for a message to be legible from a distance of 250 feet, a 5" (five inch) letter height should be used.

3. Letter and Word Spacing.

At longer viewing distances, letters tend to run together visually unless the letter' spacing is increased. Light lettering on a dark background tends to look bigger than dark letters on a light background and requires greater letter spacing and smaller stroke width. Likewise, internally lit signs may require greater spacing, depending on the intensity of light and the relationship of colors. Word spacing should be proportionate to the letter spacing used. All spacing should appear even.

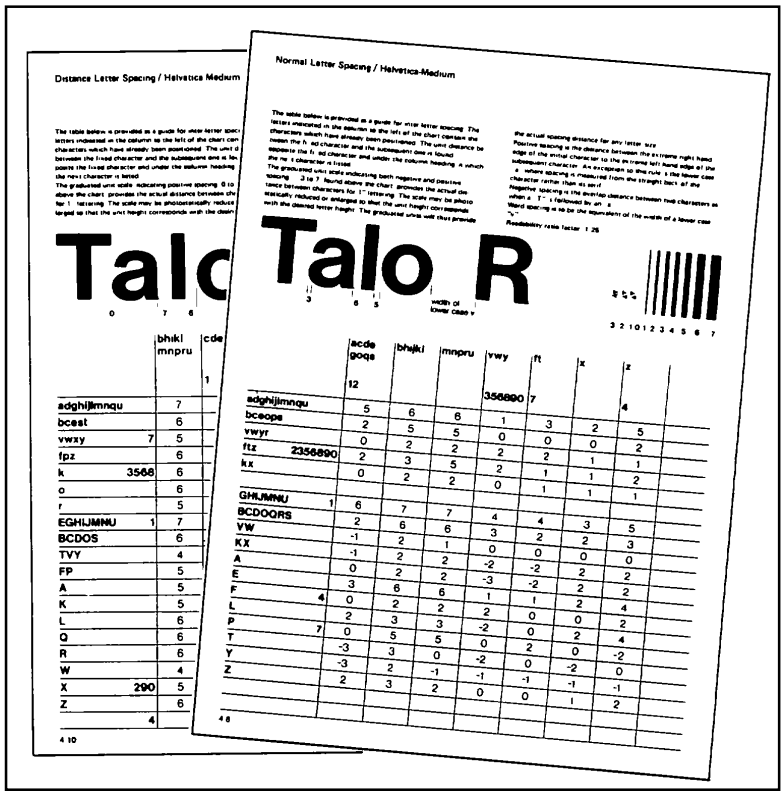


Fig. 10-16.

Letters and words spaced by a trained human eye are preferable to mechanical spacing. However, spacing guides are available *(fig. 10-16).*

COPY POSITIONING

fig. 10-17.

4. Copy Positioning. On most signs of more than a word or two, it is recommended that all copy (type and symbols) be flush left (without indentation) for ease of reading. However, on signs containing both left and right directional information, it often helps clarify the message if left turn information (including arrows) is flush left on the left of the sign and right turn information is flush right on the right side of the sign (*fig. 10-17).*

B. Symbols, Arrows and Diagrammatics.

Use symbols, arrows and diagrammatics where necessary and appropriate to convey needed information.

1. Symbols. The word "symbol" is used to refer to true symbols such as the Red Cross symbol and U.S. and interstate route shields, as well as pictograms (graphic expressions of actual objects) such as a telephone receiver *(fig. 10-18).* Symbols are useful for rapid communication, especially where they have become universally accepted and understood. However, symbols for complex objects or activities can be ambiguous and hinder, fig. 10-19 rather than aid, communication. Symbols should be used only when they permit a message to be more strongly stated or quickly understood. Symbols that have been adopted for national use such as the transportation related symbols established by the U.S. Department of Transportation should be the basis for those used on military installations. Normally, lettering should be used with symbols to avoid possible confusion *(fig. 10-19).*

fig. 10-18.

fig. 10-20.

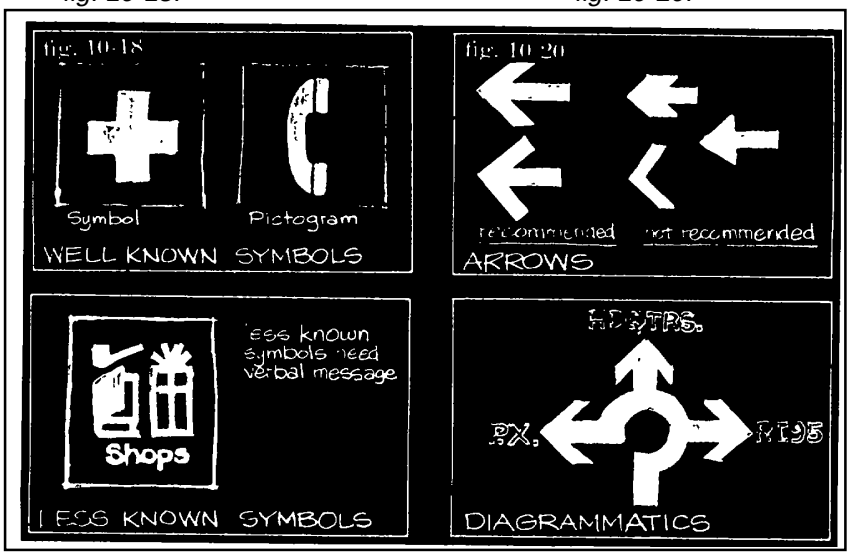


fig. 10-19.

fig . 10-21.

2. Arrows. Arrows must be legible from a distance to clearly convey the intended direction. Recommended arrow forms are as illustrated *(fig. 10-20).*

3. Diagrammatics. A diagrammatic is a means of graphically depicting an upcoming road condition when words and arrows alone may be inadequate. When an intersection or lane configuration is complex, use of a diagrammatic can help the driver visualize the situation and act accordingly (*fig. 10-21).*

C. Color.

Color coding should be used consistently to differentiate sign types, to convey their type and function and, where appropriate, to vary the apparent size or "target value" of a sign.

1. Target Value. The apparent size, or "target value" of a sign varies with its color. Yellow and white signs appear largest; red, blue and green signs appear mid-sized; and black signs appear the smallest. These apparent sizes are also affected by the contrast between the sign and its background. Theoretically, for best visibility, a sign should be darker against a bright day background, but brighter against a dark day or night background. Two techniques to improve sign visibility against diverse backgrounds are reflecting surfaces and substantial borders of a contrasting color value: dark for light signs and light for dark signs. In general, the width of the border should not exceed the stroke width of the major lettering on the sign.

2. Color Coding. The use of color on signing should be related to the color code conventions recommended by the Special

Committee on Color of the National Joint Committee on Uniform Traffic Control Devices.

This committee selected twelve colors for the color code of American Traffic Control signs, and the meanings of eight of these were specified, when used as background colors.

Red	Stop or prohibition
Green	Guide signs, permitted movement and parking
Blue	General public services
Yellow	Warning
Black	Part-time regulation
White	Full-time regulation
Orange	High danger (construction and maintenance)
Brown	Public recreation

Bright yellowgreen, light blue, purple and coral have been identified as suitable for traffic control, but their meanings are reserved for future needs. For a specific description of the use of these twelve colors, refer to the Manual on Uniform Traffic Control Devices for Streets and Highways.

D. Sign Size.

Signs must be sized so that they are visible and legible.

1. Figure/Ground Relationship. The background of a sign helps to isolate the message from the visual complexity of the sign's surroundings. The more visually complex the surroundings, the more background is needed to facilitate communication. In residential areas and in other areas of relatively low-intensity development, it is recommended that the graphics and lettering constitute approximately 60 percent of the total sign area and the background 40 percent. In areas of high-intensity development, such as the core areas of the installation, the graphics and lettering should occupy 40 percent and the background 60 percent.

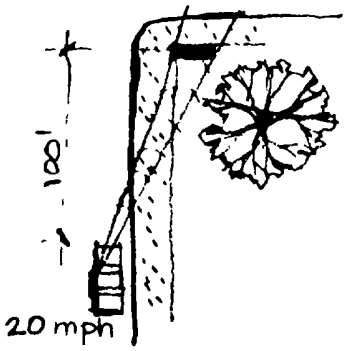


fig. 10-22.

2. Reading Distance. The distance that signs are located from the point of desired reading varies with the speed of the approaching driver (fig. 10-22).

20 mph: 100 feet
25 mph: 175 feet
30 mph: 250 feet

a. Depending on the area of graphics and lettering and following the above guidelines on letter size and figure/ground relationship, the necessary sign size may be determined.

b. For example, if it is desired that a sign be legible from 250 feet, a letter height of 5 inches is required (see 10-5 A2: Type Size). Using this size lettering, the overall message size may be determined - use 5 square feet for this example. If the sign were planned for a residential area, applying the figure/ground relationship guidelines would result in an overall sign size of 8.33 square feet. Depending on copy layout and the modular dimensions of the system, the length and width of the sign may be determined.

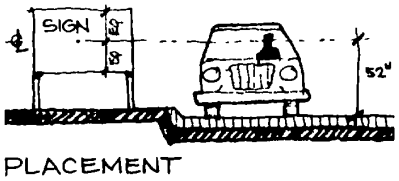


fig. 10-23.

E. Sign Placement.

Signs should be positioned for visibility and installed consistently in relationship to the roadway, walkway or building they serve.

1. General Guidelines.

a. A sign must be positioned so that there is a clear line-of-sight from the point of desired reading. A reasonable guideline for the placement of vehicular-oriented signing is to establish the height of the sign so that the center line of the main panel is at the optimum viewing height for a person seated in an automobile (approximately 52" above the pavement surface) *(fig. 10-23).* If visual obstructions prevent sign placement at this height, the sign should be raised; however, avoid exceeding a 10 degree angle from the natural line of vision.

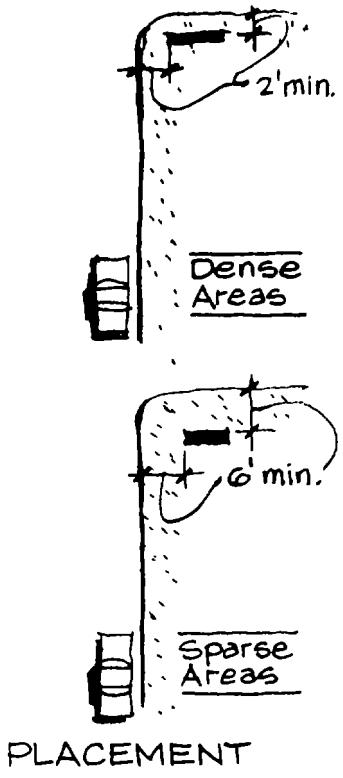


fig. 10-24.

b. Vehicular-oriented signs must be placed perpendicular to approaching traffic and not nearer to the pavement than 2 feet in densely developed areas

(6 feet is preferable and recommended for less dense areas) *(fig. 10-24).* If a vehicular-oriented sign is located within an area of pedestrian activity, a 7'-0" clearance should be maintained from the bottom of the sign panel to the pavement *(fig. 10-25).* Consult the Manual on Uniform Traffic Control Devices for other placement criteria, such as distance between signs.

fig. 10-25.

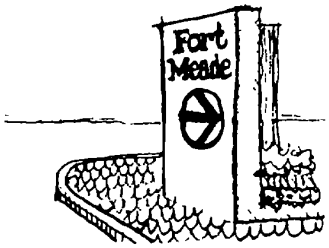
10-6.
Special Signing.


HANDICAPPED SIGNING

fig. 10-26.

A. Signing for the Handicapped.
Signs should be provided to identify facilities dedicated to or accessible to the handicapped, such as parking spaces, building entrances and rest room facilities *(fig. 10-26).*

B. Installation Entrance Signs.
Main installation entrance signs are the initial element in the identification signing hierarchy of an installation. While their design can be a special feature, it should be consistent with the installation's overall signing system and in character with the architectural/natural site setting of the installation. The size of the main entrance sign should be appropriate to its role



ENTRANCE SIGN

fig. 10-27.

in the hierarchy, the items of identification information needed and the approach speed of vehicles *(fig. 10-27).*

C. Building Identification Numbers.
Building identification numbers should be designed as part of the overall signing system of an installation. They should be located, sized and placed for visibility from their intended vantage point, consistent in design and mounting details with other building identification number signs, and compatible with the architectural character of the building *(fig. 10-28).*

1. They generally should be located at building entrances and/or other parts of the building visible from the main access street.

2. At many installations, building numbers are positioned at standard locations to provide easy fire service identification.

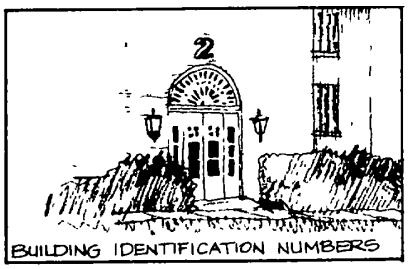


fig. 10-28.

Building identification numbers should be coordinated with fire service requirements, avoiding unnecessary redundancy and inconsistent design.

D. Memorial Plaques.
Memorial plaques represent a special type of sign. An installation should establish its own design policy for memorial plaques in response to their particular needs. The policy should establish a set of standards that covers all plaques, including standard sizes, materials, finish, copy type, mounting details and locations. *(See Paragraph 12-11: Monuments and Memorials.)*

E. Temporary Signs.
Temporary signs are frequently needed on installations and can be identificational, directional or regulatory in type. All temporary signs should conform to the general design guidelines established for the installation signing system, except for their materials which can be practical but capable of maintaining an attractive appearance throughout the expected life of the sign.